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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,587	12/05/2001	Jaxa von Schweinichen	HM-447	3535

7590 10/28/2003

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EXAMINER
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HUG, ERIC J

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 10/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<b>Application No.</b> 10/007,587	<b>Applicant(s)</b> SCHWEINICHEN ET AL.	
	<b>Examiner</b> Eric Hug	<b>Art Unit</b> 1731	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 is/are allowed.
- 6) ☒ Claim(s) 1-18 and 21 is/are rejected.
- 7) ☒ Claim(s) 19 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 2, and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Justus et al (US 3,775,241). Justus discloses a finishing device for a roll in a paper machine comprising a grinding roll that engages the surface of the roll during operation of the roll. The device is particularly used on rolls that tend to change contour at the surface when heated, such as a dryer drum. See column 1, lines 16-46, which describes the advantages of grinding heated rolls during operation versus grinding during the manufacturing of the rolls. Grinding takes place during operation so that the roll will always have the proper contour under its operational environment (column 2, lines 21-26). Therefore, with respect to the claims, Justus teaches hot treatment of a roll surface, whereby such roll is configured for exposure to increased temperature during operation and hot-ground at the operational temperature.
2. Claims 1-8, 10-12, 16-18, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Vahapesola (US 5,334,125). Vahapesola discloses a surface-hardened martensite roll for a paper machine. The roll is manufactured by a process including the steps of casting, machining, heat-treating, and grinding the surface of the mantle. The surface is hardened by the heat-

treating step (see column 3, lines 30-39 and column 5, lines 1-6). The process makes the roll less prone to brittleness and distortion at temperatures encountered on a paper machine. Therefore, with respect to the claims:

Claims 1, 2, 10-12: Justus teaches hot treatment of a roll surface, whereby such roll is configured for exposure to increased temperature during operation and includes the steps of hot-grinding at the heat-treatment temperature.

Claim 3: The roll is suitable for use at temperatures of 250 degrees C (column 6, line 49).

Claims 4-8: The roll is made of stainless steel, which is predominately iron with some chromium. It is an inherent feature of stainless steel that the exposed surface comprises oxides of iron and chromium. Therefore, the surface of the roll inherently has an oxide coating.

Claims 16-18 and 21: Prior to grinding, the roll may be tempered at a lower temperature by means of gas or water jet. The tempering temperature is chosen according to the future operating temperature of the roll (see column 5, lines 7-15).

3. Claims 1-4, 10-13, and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Theiss et al (US 3,944,444). Theiss discloses a method for heat treating cylindrical products such as rolls used in paper production. Heat treatment provides characteristics so that the rolls can be functional in their intended operating environments. The roll is first forged from steel. Following forging are steps including heat-treating and rough machining (grinding). After rough machining, a conditioning or intermediate heat treatment is then done to produce an outer surface with a desired micro-structure. See column 4, lines 2-27. Following this step, the roll may be quenched by water and tempered in a furnace (column 5, lines 19-25), and/or subject to a second

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rough machining (column 5, lines 25-28). A final hardening step (column 5, lines 31-35) takes place at a suitable temperature of about 400 degrees F (about 200 deg C).

There may be several cycles of heating and cooling the roll during manufacture (see column 10, lines 42-44, lines 64-68). The roll may be subject to a final grinding operation after the final heat treatment (column 11, lines 8-12) and/or a coating step to protect the surface (column 11, lines 13-17).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Justus et al (US 3,775,241) in view of Smook (Handbook for Pulp and Paper Technologists, 2<sup>nd</sup> Edition). Justus (described above) teaches a device for grinding a hot paper machine roll (press roll or dryer roll) under operating conditions. With respect to the temperature range, Justus does not expressly disclose the operating temperature of the roll. However, it is well known to one skilled in the art that paper machine rolls can reach temperatures between the claimed range of 50-250 degrees C, as exemplified on pp. 259-260 of Smook regarding hot press rolls (60-90 deg C) and on pp. 267 regarding dryer cylinders (heated by saturated steam at 212 deg F = 100 deg C, or higher temperatures).

5. Claims 9, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Theiss et al (US 3,944,444) in view of Nikulainen et al (US 5,096,734). Theiss discloses the roll heat-treatment process described above. During this treatment, the roll is rotated in a manner approximating that during operation (column 6, lines 24-27). No specific mention is made regarding balancing the roll, however due to the large size and weight of a paper making roll, it would be imperative to balance the roll when approaching paper machine speeds. Nikulainen is cited here merely to exemplify that it is well known to balance paper machine rolls before use in a paper making operation. Therefore, at the time of the invention it would have been obvious to one skilled in the art to balance the roll particularly at high temperatures to properly simulate operating conditions. One would also be motivated to balance the roll so that heat treatment is carried out at conditions best replicating those observed on a paper machine.

*Allowable Subject Matter*

Claim 22 is allowed.

Claims 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 22, the prior art does not teach or suggest cold grinding a roll with a negative profile of a hot profile that was determined while the roll was hot.

Regarding claims 19 and 20, the prior art does not disclose or suggest additionally cooling the roll surface using either a roll or band with a cooling cover or using a pressure-loaded cooling beam against the surface of the roll.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Kuosmanen et al (US 5,940,969) discloses balancing a coated paper machine roll with the aid of machining and grinding.

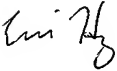
Gorgs et al (DE 37 14 187) teaches balancing a printing machine roller to prevent distortion during heat treatment.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 703 308-1980. The examiner can normally be reached on Monday through Friday, 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0651.



jeh

  
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